KfW Development Bank

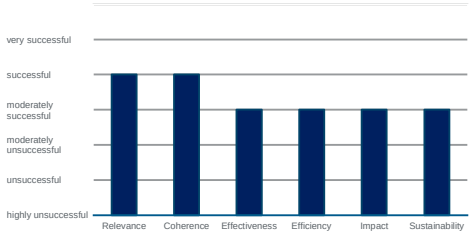
Ex-post evaluation
Polio eradication, Phase I and II, Pakistan

Title	Polio eradication, Phase I and II		
Sector and CRS code	Infectious disease control (12250)		
Project number	BMZ No. 2016 68 490 and 2017 67 334		
Commissioned by	Federal Ministry for Economic Cooperation and Development (BMZ)		
Recipient/Executing agency	Islamic Republic of Pakistan / Pakistani Ministry of National Health Services Regulations and Coordination (MoNHSR&C)		
Project volume/ Financing instrument	EUR 9.6 million and EUR 5.00 million in budget funds		
Project duration	2017–2020		
Year of report	2024	**Year of random sample**	2022

Objectives and project outline

The objectives at outcome level were to immunise all children under five years of age against poliomyelitis and to deploy an effective surveillance and monitoring system. The objective at impact level was to interrupt the transmission of polio in Pakistan by 2019 as part of worldwide efforts to eradicate the poliovirus. The National Emergency Action Plan was key to the project's design. Operating on behalf of Pakistan's Ministry of National Health Services Regulations and Coordination, the WHO and UNICEF were responsible for preparing and implementing the polio vaccination campaigns, including additional measures.

Overall rating:
moderately successful



Key findings

The project contributed as part of the *Polio Eradication Initiative* to the immunisation of children under the age of five with vaccination campaigns and to the supervision of polio events; however, it has not yet been possible to interrupt its transmission. The project is rated as moderately successful.

– Relevance and coherence were high. Pakistan is the last polio-endemic country besides Afghanistan. Measures focused vertically on polio eradication are embedded in national and international health plans and programmes.

– During the implementation period, vaccination boycotts occurred in the high-risk areas at the border with Afghanistan, which led to a worsening of the vaccination situation, among other things. In the following years, the situation was stabilised again by partially realigning the national programme (effectiveness).

– The monitoring system proved to be functional and can also be used for other health programmes and pandemic prevention (as in the COVID-19 pandemic). Even though it was not possible to eradicate polio, the project contributed to polio control (impact).

– Despite high costs for transporting and protecting the vaccination teams, efficient implementation was ensured by the experienced implementation partners WHO and UNICEF and by using established structures. Better coordination with the routine vaccination programme could have increased efficiency.

– The sustainability of the project is jeopardised by a persistently precarious security situation and a negative attitude towards the vaccination campaigns to some extent.

Conclusions

– The complex and fragile framework conditions in the remaining core reservoirs of the poliovirus require small-scale and context-specific implementation strategies.

– Linking vaccination campaigns with basic health care measures increases the population's acceptance of vaccinations.

– The collaborative relationship with Afghanistan must be continued and intensified to curb cross-border polio infections resulting from migration.

– Financial Cooperation had no direct influence; multilateral financing for the *Global Polio Eradication Initiative* (GPEI) seems more efficient and effective.

Ex post evaluation – rating according to OECD-DAC criteria

Overview of sub-ratings:

Relevance	2
Coherence	2
Effectiveness	3
Efficiency	3
Overarching developmental impact	3
Sustainability	3
Overall rating:	**3**

Overall context

The World Health Organization (WHO) and its partners decided to eradicate poliomyelitis in 1988 as part of the Global Polio Eradication Initiative (GPEI). Since the GPEI was founded, there has been a global downturn in polio cases of over 99%; vaccination campaigns have saved more than 20 million people from paralysis and at least 1.5 million people from polio death.

Despite all efforts, the disease has not yet been definitively eradicated. Now that wild poliovirus type 2 (WPV2) was declared eradicated in 2015 and WPV3 in 2019, only WPV1 is currently circulating in two polio-endemic countries, Pakistan and Afghanistan. In addition to diseases caused by WPV, infections with circulating vaccine-derived poliovirus type 2 (cVDPV2) have been a major problem in recent years. Cases of cVDPV infection occur in areas where a large proportion of the population is unvaccinated. In rare cases, the attenuated viruses in the oral vaccination (attenuated live vaccination) can cause paralysis, circulate undetected for a long time and also mutate. Accordingly, the current GPEI Strategy Plan 2022–2026 defines the main global goals of eradicating WPV1 in the remaining two endemic countries of Pakistan and Afghanistan, interrupting the transmission of cVDPV and preventing outbreaks in non-endemic countries.

In recent years, following the transition of the vaccination strategy from a trivalent oral polio vaccine (tOPV) to a bivalent oral vaccine (bOPV), multiple vaccine virus outbreaks (cVDPV2 outbreaks) occurred in 17 countries with low vaccination rates in 2016.[1] The use of a novel OPV (nOPV), which is more genetically stable than the original bivalent OPV2, is intended to contain cVDPV2 outbreaks. More than 600 million doses of nOPV2 have been administered in 28 countries since March 2021. So far, seven cases of acute flaccid paralysis (AFD) have occurred in children in the Democratic Republic of Congo and the Republic of Burundi with evidence of nOPV2.

Although the number of cVDPV2 cases declined in 2021–2023, two major challenges remain to achieve the global eradication target:

1) high-quality monitoring, in which polioviruses are detected in good time by monitoring activities (surveillance) of acute flaccid paralysis (AFP) and sampling of wastewater, and

2) the implementation of effective measures to combat outbreaks (vaccinations in the event of outbreaks) and high vaccination rates worldwide that prevent the international spread of the virus.

Due to the occurrence of WPV1 cases in the southern provinces of Pakistan and the neighbouring districts in eastern Afghanistan, which are associated with high security risks, it was not possible to achieve the eradication target for 2023 set out in the current GPEI strategy. A major challenge in supplying children with polio vaccine in this area is the considerable mobility between Afghanistan and Pakistan. In 2022, both countries resumed cross-border coordination and synchronisation of vaccination campaigns, but these are repeatedly overshadowed by

[1] trivalent vaccine provides protection against the three known poliovirus serotypes WPV1, WPV2 and WPV3. The bivalent vaccine provides protection against WPV1 and WPV3.

violent incidents by extremists. These groups also disseminate conspiracy theories about alleged side effects of the polio vaccine.

While only six cases of acute flaccid paralysis were attributed to WPV1 infections worldwide in 2021, the number of cases rose to 30 in 2022. The reintroduction of WPV1 from Pakistan into the Republics of Malawi and Mozambique has also resulted in new cases of disease being detected on the African continent. The goal of a polio-free world can be achieved if all three pillars of polio eradication (vaccination, follow-up/surveillance and containment) are consistently implemented at a high level. However, this is taking longer than expected.

Germany is heavily involved in the fight against polio and is now one of the three largest donors of the GPEI. Up to and including 2021, the German Federal Government provided USD 772 million of bilateral funds for polio eradication, including funding for programmes in Afghanistan, India, Nigeria and Pakistan. The FC project evaluated here was part of this bilateral cooperation to eradicate polio. Since 2020, Germany has supported the GPEI directly at international level with EUR 35 million annually and actively contributed to shaping the strategic focus of the GPEI.

Project summary

The aim of the FC project was to contribute to the global eradication of poliomyelitis (impact) by consistently immunising all children under the age of five and ensuring supervision and follow-up (outcome). To this end, the Pakistani *Polio Eradication Initiative* (PEI) was co-financed to implement the annual *National Emergency Action Plans for Polio Eradication* (NEAP), which were drawn up with the support of the GPEI under the responsibility of the Pakistani *Ministry of National Health Services Regulations and Coordination* (MoNHSR&C) by the responsible *National Emergency Operations Centre* (NEOC). The NEOC also coordinated the implementation of the NEAP catalogues of measures, with the WHO and UNICEF being the main implementation partners.

The two phases of the FC project contributed to closing financing gaps in the NEAP. Phase I supported the NEAP 2017/2018 and Phase II the NEAP 2018/2019. Half of the funds were disbursed to the WHO and UNICEF in one tranche each. In Phase I, the disbursement took place at the end of 2017 and in Phase II at the end of 2018, thus co-financing the *Polio Eradication Initiative* (PEI) measures for the years 2018 (Phase I) and 2019 (Phase II). In accordance with the established and coordinated cooperation between the PEI and the two implementation partners UNICEF and WHO, FC mainly financed: (a) communication and mobilisation measures, (b) the procurement of vaccines, (c) the implementation of subnational *supplementary immunisation activities* (SIAs) that are in addition to routine vaccinations, (d) vaccinations in so-called *permanent transit points* (PTPs), which were set up, for example, at border crossings, as well as (e) the strengthening of surveillance for the detection of cases of acute flaccid paralysis and the detection of polioviruses in environmental samples for polio monitoring (WHO). Measures were implemented in parallel with basic health care and complemented the routine immunisation (*Expanded Programme on Immunisation*, EPI) of children.

The vaccination campaigns were intended to achieve continuous vaccination coverage for children under the age of five (target group), and, in particular, children who have not yet been reached by the (routine) vaccination measures. The intent was to prevent new infections with polio. The entire population of Pakistan and those of the (neighbouring) countries which could experience polio cases originating from Pakistan benefit indirectly from this.

The measures paid particular attention to the geographical regions with the highest risk of polio transmission. These are recorded in the so-called *tier* classification. Of the total of 166 districts nationwide, 11 districts with a population of around 4 million inhabitants are defined as core risk districts (Tier 1, highest risk) and 35 districts with a population of 8.3 million inhabitants as high-risk districts (Tier 2). The focus of the FC co-financed measure was on the regions classified as Tier 1 and Tier 2 (see Fig. 1). These were mainly the regions of Karachi (Sindh Province), the Quetta Block (including Killa Abdullah, Pishin, in Balochistan) and Peshawar/Khyber Pakhtunkhwa (KP).

Total costs

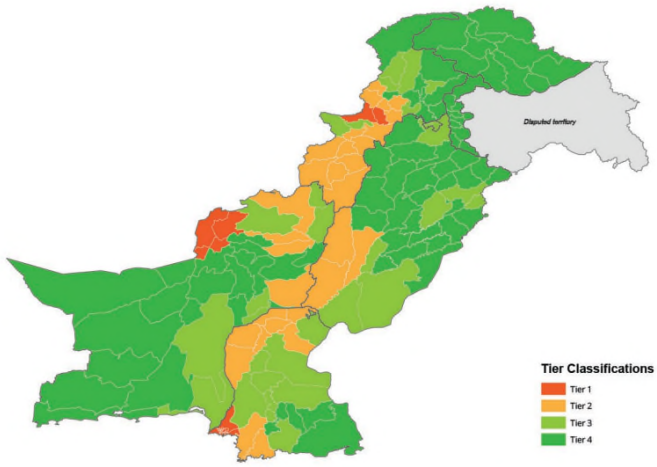
The total costs reported by the GPEI at the time of the project appraisal of the first phase for the period 2016–2017 amounted to around EUR 454.8 million (with a financial gap of around EUR 212.84 million) and at appraisal of the second phase for 2018 and 2019, they amounted to around EUR 389.75 million (with a financial gap of around EUR 167.46 million).

FC co-financing was finally provided for Phase 1 in 2018 and for Phase 2 in 2019. The following figures were provided by the WHO and UNICEF for the evaluation and refer to the budget for 2018 and 2019 (planned) as well as the expenditures in the respective years (actual). In total, the FC contribution amounted to 4% of the total costs for 2018 and 2019.

In EUR million	Investment (Phase 1, 2018) (planned)	Investment (Phase 1, 2018) (actual)	Investment (Phase 2, 2019) (planned)	Investment (Phase 2, 2019) (actual)
Investment costs (total)	**197.74**[2]	**206.1**	**207.7**	**171.60**
Counterpart contribution[3]	n/a	44.00	n/a	48.05
Debt financing	n/a	162.1	n/a	123.55[4]
of which BMZ budget funds	*9.6*[5]	*9.6*	*5.0*	*5.0*

Map of Pakistan highlighting the districts at risk

Figure 11 – Map of Pakistan showing different district Tier classifications for 2018/2019.*
Tier classification may be updated on a 6-monthly basis. Only parts of Tier 3 districts to be included in SNIDs.



*This figure reflects current geographic boundaries following the merger between the formerly Federally Administered Tribal Areas (FATA) with Khyber Pakhtunkhwa province in May 2018.

Source: *National Emergency Action Plan for Polio Eradication* 2018/2019

[2] Conversion rate 2018 according to information from the GPEI: USD 1 = EUR 0.88

[3] Counterpart contributions include safety measures, personnel of ministries and EOCs – the extent to which these are represented in monetary terms here could not be clarified conclusively.

[4] The largest donors are Islamic Development Bank, Bill and Melinda Gates Foundation, USAID, Canada and Rotary International

[5] At the time of the appraisal, EUR 0.405 million was added to the EUR 9.595 million for 2016 as part of the anticipated appraisal part for 2017, but this was not implemented.

Rating according to OECD-DAC criteria

Relevance

1. Alignment with policies and priorities

Along with Afghanistan, Pakistan is one of two countries in the world that is still not classified as polio-free by the World Health Organization (WHO). The districts on both sides of the Afghanistan-Pakistan border are the last remaining reservoir for the poliovirus and are therefore crucial for achieving the global goal of polio eradication. The programme to combat polio in Pakistan was planned and implemented as part of the current GPEI strategic plans (*Polio Eradication & Endgame Strategic Plan 2013–2018*). The *National Emergency Action Plan for Polio Eradication* (NEAP) of the Pakistani Government served as a conceptual basis, which was continuously updated under the leadership of the Pakistani Ministry of National Health Services Regulations and Coordination and in close coordination with the GPEI.

The involvement of German FC in the *Polio Eradication Initiative* (PEI) in Pakistan addressed a global problem, given that a single polio infection arising anywhere in the world poses a risk of spreading to other countries and, in turn, of creating an international epidemic. As a result, the FC project was in line with the strategic objectives of German development policy in the health sector, which are aimed at preventing the spread of epidemics and diseases around the world and taking a global approach to combatting communicable diseases. In addition, the financial involvement in Pakistan's national PEI made a contribution to the 2030 Agenda – in particular, to Sustainable Development Goal 3 (good health and well-being).

2. Alignment with needs and capacities of persons concerned

The direct target group was children under the age of five in Pakistan (approx. 39.4 million). Special attention was paid to children who were registered but not yet reached by (routine) vaccination measures ("missed children"). The selection was made exclusively on the basis of age without reference to income, gender or ethnicity. Indirectly, this benefited the entire population of the country as well as the population of neighbouring countries. Since polio can de facto be spread from Pakistan worldwide (e.g., Malawi 2021), support for the eradication of polio in Pakistan should be regarded as a global public good.

The relevance is somewhat relativised by the health priorities of the target group. Given the prevalence and disease burden of other childhood diseases (e.g., measles, whooping cough) and the fundamental health problems in Pakistan, the goal of eradicating the poliovirus is a secondary priority for the immediate target group. However, the fact that polio accounted for a barely measurable percentage of the disease burden of children in Pakistan at the time of the project appraisal does not weaken the relevance of the programme's global approach.

The capacities of the partners are characterised by challenges in the area of governance during the appraisal and today. In the Corruption Perceptions Index (CPI), Pakistan fell from 117th place out of 180 countries in 2017 to 133rd place in 2023. Pakistan's political environment and administrative bodies are characterised by a lack of transparency, corruption and stakeholders pursuing their own interests.

3. Suitability of project concept

Conceptually, PEI followed a vertical approach to global health in which - in contrast to horizontal approaches to primary health care - all resources were focussed on interrupting polio transmission. The PEI focused on vaccination campaigns, which compensated for the lack of coverage by routine immunisations as part of the *Expanded Programme on Immunisation* (EPI). The theory of change underlying the German FC contribution corresponded to this approach. By supporting the PEI through the financing of vaccines, vaccination campaigns and surveillance, the intent was to improve access to polio vaccinations for the immediate target group (children under five years old). Vaccination coverage of 80% of the target group results in what is known as herd immunity in which the transmission of polioviruses is highly unlikely or interrupted. This theory of change is also plausible and appropriate from today's perspective.

Given the serious shortcomings of Pakistan's healthcare system, the chosen design as a vertical programme for the efficient provision of polio vaccines was appropriate for the purpose of targeting all children under the age of five. The WHO and UNICEF were suitable implementation partners thanks to their normative power, technical expertise and many years of experience with globally coordinated and internationally funded polio control programmes. The implementation structure essentially corresponds to all previous FC projects to combat polio (in addition to Pakistan, Nigeria, India and Afghanistan were supported with bilateral financing as part of the GPEI),

through which a total of USD 772 million has so far been made available and implemented by the German Federal Government.

As part of the ex-post evaluation (EPE), the outcome and impact targets were revised to clearly reflect the different levels of the impact model (see Effectiveness and Impact). The key indicators and their target values were appropriate; however, some indicators were not clearly defined, and the reporting was not rigorous; these indicators were not included in the EPE.

4. Reaction to changes/adaptability

The measures planned in the NEAP comprise *Supplementary Immunisation Activities* (SIA) that supplement routine immunisation, *National Immunization Days* (NID) and *Sub-National Immunization Days* (SNID), the collection and analysis of surveillance data and reactive vaccination campaigns. All these measures require a flexible management structure that is given with the *National Emergency Operation Centre* (NEOC) and the five *Emergency Operation Centres* at provincial level. A key concern was to analyse the barriers to access for children in high-risk districts and to develop appropriate strategies to improve acceptance and access to budgets in these areas. An example of this is an event in Peshawar in April 2019 ("Peshawar incident") with massive negative propaganda on social media about alleged vaccine side effects. This contributed to a marked increase in vaccine refusal and rejection in 2019, with an extremely high rate of missed children in some districts. An attempt was made to counteract this with increased involvement of municipal vaccination assistants and targeted communication campaigns involving local opinion leaders, the media and those with religious influence. As a result, the negative effects of the "Peshawar incident" were mitigated and the number of "missed children" was reduced.

The FC project supported the required flexible use of funds insofar as there was no specific "earmarking" of the funds. Thus, the implementation partners, WHO and UNICEF, were able to react under the coordination of the NEOC and within their respective cope of work and responsibilities according to needs with the FC co-financing at short notice.

One example of PEI's increasing transformational capabilities is a project recently launched through the NEOC: *"The Listening Project. Women-led solutions for a polio-free Pakistan".* This project systematically seeks the opinions and experiences of female vaccination assistants deployed at municipal level in high-risk areas (60% of municipal vaccination assistants are women). Together, innovative approaches are then developed to address the complex barriers to access in a context-specific and gender-sensitive manner. The programme also aims to promote female vaccination assistants in terms of *"post-polio careers"* and integration into the general health system.

Rating summary

The project addressed the core problems of polio control in Pakistan and its implications for the global eradication of polio with an appropriate design and using an established implementation structure. The project was relevant both at the time of the appraisal and from today's perspective.

Relevance: 2 (both phases)

Coherence

5. Internal coherence

Health has not been a focus of German DC with Pakistan since 2016. Both projects to combat polio are part of the DC programme "Support for health system development in Pakistan", which is being phased out and aims to facilitate access to high-quality and affordable health services for poor and vulnerable groups, in particular. In addition to the present project, FC supported blood banks, family planning activities, the development of health insurance and the national vaccination programme, the *Expanded Program on Immunisation* (EPI), at the time of project implementation. Synergies between the polio programme and the other FC and TC measures were not addressed in a targeted manner.

The EPI, which is responsible for routine vaccinations, is particularly relevant for the effectiveness of the PEI. EPI vaccinations also include routine polio vaccination in children under one year of age. The current polio vaccination regimen provides for a total of four oral polio vaccinations with the live attenuated vaccine (OPV) and two

intramuscularly administered vaccinations with the inactivated polio vaccine (IPV) by the end of the first year of life. The vaccinations carried out via the EPI are recorded in an EPI vaccination passport or card and a copy is given to the parents. Vaccinations are mainly carried out in basic health care inpatient facilities or via outreach activities. In addition, the PEI carries out the additional vaccination campaigns (SIAs) with the home-to-home approach for children under the age of five; these are also registered separately.

The FC project to co-finance the EPI in Pakistan was implemented via the Global Vaccine Alliance (Gavi), with the WHO and UNICEF acting as implementing partners as well. Like the PEI, the EPI is also designed as a vertical programme focusing on the control of certain diseases through vaccination. It is not integrated into the health care system. Instead, it provides vaccines and technical support for the national vaccination programme through a parallel financing and procurement system. Gavi bundles donor and partner services and ensures the availability of sufficient funding while UNICEF procures the vaccines.

Effective cooperation and coordination with the EPI at strategic and operational level is one of the decisive factors for the achievement of the PEI's targets, but unfortunately it was not yet sufficient during the implementation period. Corresponding deficits were regularly discussed in the reports from the *Technical Advisory Group (TAG) on Polio Eradication* in Pakistan, including in 2019 when the polio situation in Pakistan deteriorated significantly. Although both programmes were supported almost simultaneously, FC did not intervene to encourage better EPI/PEI cooperation. However, FC addressed this problem in its advisory function to the Federal Ministry for Economic Cooperation and Development (BMZ). In the responsible committees of the GPEI and Gavi, the BMZ pointed out the importance of institutional cooperation between the GPEI and Gavi and a gradual release from a stand-alone "polio approach" to a horizontal approach. Gavi is now a formal member of the GPEI and there is a detailed cooperation plan for the endemic countries Pakistan and Afghanistan, as well as for the countries with an increased risk of outbreaks.

In addition to the global link to the polio eradication initiative, the projects in Pakistan are particularly related to polio control in Afghanistan, the second remaining endemic country for poliovirus. Both countries are to be regarded as an "epidemiological block", as parts of the population move regularly and uncontrolled between these countries – and therefore so does the poliovirus. The extent and quality of the coordination and cooperation of both polio control programmes are decisive factors for achieving the respective national and global eradication targets. The cooperation is described mainly as positive and constructive, but there are no documents for objectively validating the quality of cross-border cooperation. FC supported the polio programme in Afghanistan in approximately the same implementation period with an implementation constellation identical to Pakistan via the GPEI with the WHO and UNICEF as implementation partners. There were also no FC interactions here with the GPEI, the implementing partners or the respective health ministries regarding the transnational implementation modalities.

The project contributes to the realisation of the human right to health, is in line with the SDGs and the GPEI's global strategy for combating or eradicating polio (currently: *Polio Eradication Strategy 2022–2026: Delivery in a Promise*).

Vaccinations are undeniably essential measures for protecting the life and health of the target group. The WHO estimates that more than 20 million cases of paralysis and an estimated 1.5 million deaths have been prevented from polio vaccinations worldwide since 1988. Polio vaccinations protect the target group directly, prevent national and regional spread and serve the global goal of eradicating this disease.

6. External coherence

The GPEI provides a coherent global framework that guides the national PEI.

The established structures of the PEI were used in the project. The implementation partners WHO and UNICEF, commissioned by the Ministry of National Health Services Regulations and Coordination and coordinated with the NEOC, ensure the coherence and stringency of national polio control with the global programme and its surveillance and monitoring system. This is particularly important in Pakistan, as one of the last two remaining endemic polio countries. In addition, the existing basic health structures in Pakistan would not have been able to implement the polio programme.

The Pakistani counterpart contribution mainly included the participation of employees of the ministry, subordinate authorities and the EOC in the implemented campaigns. The Pakistani government is also taking on significant expenses for the safety of vaccination personnel when carrying out the vaccination campaigns.

The PEI was advised at the national level by the Technical Advisory Group (TAG), and an advisory role was also given to international experts from the Independent Monitoring Board (IMB), which the Executive Board of the WHO and the World Health Assembly tasked with reviewing the GPEI's progress and target achievement in 2010. The 22 reports so far contain special reports for the endemic countries, currently still Afghanistan and Pakistan. The PEI status report and recommendations prepared in the current IMB report reflect the analysis of the world's most competent experts in the field of polio control and are probably the most objective source for assessing the progress of polio control in Pakistan and their perspective. The IMB reports were also used for the EPE.

With regard to cooperation and coordination between the PEI and the EPI, see Internal coherence.

Rating summary:

Support for the Pakistani Polio Programme was not directly linked to other German DC measures and no synergies were sought or implemented in the dialogue at country level. At a global level, however, the experiences from Pakistan were brought into the discussion of future GPEI strategies by the Federal Ministry for Economic Cooperation and Development (BMZ). Given Pakistan's important contribution to the achievement of the global goal of polio eradication, coherence was crucial due to the fact that there was no alternative yet to the GPEI and the use of its established implementation structures. Cooperation and coordination with the national routine vaccination programme, supported by Gavi, only improved after the FC projects' observation period.

Coherence: 2 (both phases)

Effectiveness

7. Achievement of (intended) goals

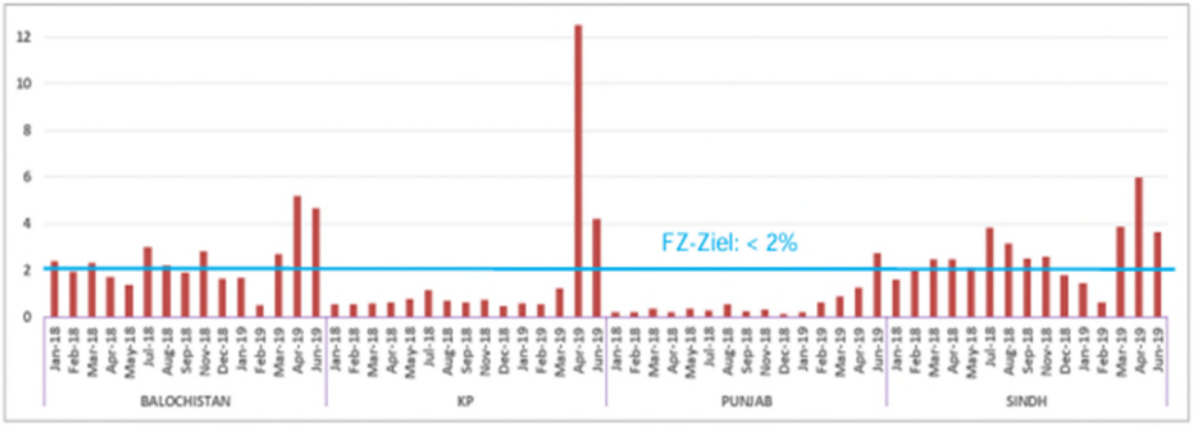
The objectives at outcome level, which were adjusted for the evaluation, were to consistently immunise all children under five years of age against poliomyelitis and to deploy an effective surveillance and monitoring system. The achievement of the set targets is summarised in the following table:

Indicator	Status at PA (2016)	Target value PA	Actual value at final inspection (2020)	Actual value at EPE (2023*)
(1) The proportion of under-five-year-olds who have not been vaccinated against poliovirus but who have been recorded ("missed children") is less than 2% at the end of each vaccination campaign.	4.2 (2016)	<2%	12.5% (2019) Not achieved on average, but significant differences with regard to the individual campaigns and regions (see Fig. 2)	9.08% at three *National Immunization Days* (NIDs) 12.45% at nine *Sub-national Immunization Days* (SNIDs) Not achieved
(2) 90% of Union Councils have acceptable quality of vaccination campaigns recorded by Lot Quality Assurance (LQAS)	79% (2016) 88% (2017)	90% (2016) 90% (2017)	87.4% (2018) 79% (2019)	80.4% for three NIDs 77.6% for nine SNIDs Not achieved
(3) The rate of non-polio acute flaccid paralysis (NPAFP) is greater than 6/100,000 in children under 15 years of age (new indicator in phase II)	11.7/100,000 Children <15 years (2017)	>6/100,000 Children <15 years	16.6/100,000 Children <15 years (2019)	15.3/100,000 Children <15 years (2023) Not achieved

Source: KfW project documentation, *Information from the National Emergency Operations Centre for Polio Eradication as part of the EPE

Given that around 40 million children in the country are the main target group, **Indicator (1) for "missed children"** represents a strategic core objective of the NEAP. There are no internationally valid standards for the target level, but they are defined nationally and context-specifically. In Afghanistan, the target level for this indicator is 6%. Although the target level of 2% was too ambitious for Pakistan from today's perspective, this indicator shows one of the main problems of polio control in Pakistan to date: the persistent safety-critical situation in some districts of the high-risk areas and the associated restrictions on access to the target group. When assessing this indicator, it is therefore necessary to take into account the strong regional differences in the four focal provinces, in which the Tier 1 and Tier 2 regions are also located (see Fig. 1). It is clear that the failure to achieve the target value during the implementation period was mainly due to the situation in Khyber-Pakhtunkhwa (KP) in the north-west.

Figure 1: Proportion of under-five-year-olds not yet vaccinated against the wild poliovirus but registered in high-risk provinces from January 2018 to June 2019



Source: Report, Meeting of the TAG on Polio Eradication in Pakistan, 2019

The precarious political-military situation was and remains a constant challenge. The ever-increasing security situation in the high-risk areas important for polio eradication and the associated growing difficulties in accessing the direct target group of children under the age of five are hindering the comprehensive implementation of the programme. Around 400,000 vaccination assistants are joined by around 80,000 security staff. Every year, there are reports that vaccination assistants and accompanying security personnel are attacked, kidnapped or killed – this also happened during the implementation period of the FC projects.

In many rural regions, there is still little confidence in vaccination programmes, which is driven to some extent by targeted misinformation on vaccination side effects via social media. As a result, vaccination campaigns in some regions (e.g. Peshawar) were de facto brought to a standstill in the first half of 2019. In addition, there is often a negative attitude from local opinion leaders. Furthermore, many people are suspicious of the high frequency of vaccination campaigns; in high-risk areas, campaigns have been offered monthly for years with information and educational events in the interim periods. This frequency of activities has led to "polio fatigue" in both the population and on the side of those implementing the measures.

The lack of integration of polio vaccinations with other health or social benefits (e.g. nutrition, mother-child health services, WASH) for the poor population may also have reduced acceptance of polio vaccinations, particularly in municipalities where the most elementary basic needs are barely met. Vaccination campaigns are often boycotted and access to districts is linked to the fulfilment of various, sometimes political, demands. In addition, there are cultural or religious reservations about the effectiveness of vaccines, as well as the fact that the respective vaccination personnel often do not belong to the same ethnic and cultural group as the children being vaccinated. Also, some polio vaccinations could not be administered due to the absence of children, which was partly due to frequent changes in the location of families.

Massive population movements along and across the border with Afghanistan further aggravated the situation. In Afghanistan, too, the proportion of "missed children" as part of the national and regional vaccination campaigns increased dramatically from 2018/19 – and the occurrence of polio cases increased in parallel with the increase in "missed children". One of the reasons for this was a worsening security situation, with the Taliban refusing

access to WHO and UNICEF workers in the districts they controlled from April to September 2019. It has only been since late September 2019 that immunisation teams are again able to operate – albeit only in mosques, with house-to-house campaigns no longer possible. As a result of the COVID-19 pandemic, polio vaccination activities were temporarily suspended in both Afghanistan and Pakistan, which continued to lead to an increase in wild polio cases as well as increased outbreaks of vaccine-derived poliovirus, which are also a reflection of vaccination gaps.

The target value of "missed children" was not achieved by a significant amount in some high-risk districts towards the end of the implementation period of the FC projects for the above-mentioned reasons. This had serious consequences at impact level (see below).

Lot Quality Assurance Sampling (LQAS) is used as an indicator (2) to measure the quality of completed or carried out vaccination campaigns. Sixty children are randomly selected from small vaccinated population clusters and examined. If 0–3 children are unvaccinated, vaccination coverage is considered to be >90%, which defines the coverage for this cluster as good. If 4–8 children are unvaccinated, the vaccination coverage is defined as insufficient at 80–90%. While in 2018, almost all vaccination campaigns with the LQAS value were close to the target value (>90%), in 2019, only two out of a total of 17 vaccination campaigns achieved the indicator value of >90%. Especially for the regions where polio transmission was never interrupted (Karachi, Peshawar, Quetta Block), the low LQAS values reflect the barriers to access with resulting vaccination gaps.

As **Indicator (3) for a functioning surveillance and monitoring system**, the rate of non-polio acute flaccid paralysis (NPAFP) was included in the second phase as a quality characteristic for the quality of the AFP recording. The NPAFP rate increased over the implementation period from 11.7 cases per 100,000 (2017) and 15.9 (2018) to 16.7 cases in 2019. With regard to the special risk regions, in 2018, 12.6 per 100,000 were registered in Karachi, 14 in Quetta Block and 18.8 in Peshawar. This can be assumed to be a monitoring system that also works in the high-risk regions to detect acute flaccid paralysis and thus to identify new cases of polio.

8. Contribution to goal achievement

The FC funds were used to co-finance the PEI and the implementation of the NEAP 2018–2019 and flowed into the activities of the WHO and UNICEF, in accordance with the established and coordinated cooperation between the PEI and the two implementation partners. Co-financing mainly included communication and mobilisation measures, procurement of vaccines and implementation of vaccinations by *Community Based Vaccination* (CBV) and mobile teams (UNICEF), as well as the strengthening of surveillance for the recognition of cases of flaccid paralysis and the detection of polioviruses in environmental samples for supervision of the polio situation (WHO).

In Phase I (2018), FC funds were used to procure approximately 34 million doses of bOPV for two vaccination campaigns in July and December 2018 as well as activities at the *permanent transit points* (PTPs) at the border with Afghanistan. In Phase II (2019), 17.6 million vaccine doses were procured for two vaccination campaigns in March and August 2019 as well as for PTP activities. FC-financed vaccinations represented approximately 10% of the need for bOPV for 2018 and 2019

The target for reducing the number of "missed children" was not achieved during the implementation period. Some of the reasons have been outlined above. The co-financed surveillance and monitoring system also proved to be robust and effective. FC cannot be assigned direct co-responsibility for the PEI target achievement that deteriorated significantly during the implementation period of the FC projects as a result of external and internal factors, both at outcome and impact level, especially as FC had no influence on the operational design of the project.

The TAG and IMB analyses of the situation of the vaccination programme cite operational deficits, counter-productive politicisation at various levels and inefficiencies in implementation as internal factors. The latter are likely to be primarily due to inadequate cooperation with the routine vaccination programme. In addition, the target group has a high unmet need for health services that goes beyond polio. One of the GPEI's five strategic goals for 2022 to 2026 is to expand the integration of PEI measures with a wider circle of partners, basic health care and municipal services.[6] The PEI would have already benefited greatly from an integrated service delivery (ISD) approach in the past. Combining polio campaigns with basic health services improves the overall health situation and increases confidence in vaccination campaigns. This combination of vaccination campaigns with other essential health services, such as mother-child health, nutrition and sanitation, was not implemented during the

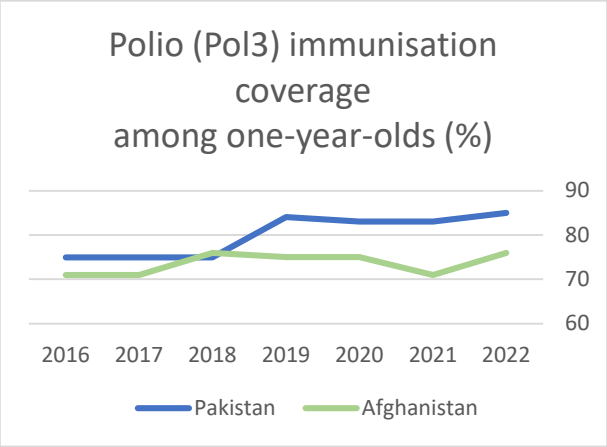
[6] Integration: Polio Resources Responding to Community Needs & Strengthening Health Systems, GPEI April 2024

implementation period – resulting in a lack of understanding and acceptance by the population with regard to the frequent vaccinations, while other basic health needs were not addressed.

As mentioned above, the precarious situation of the Pakistani polio programme during the implementation period was thoroughly analysed by national and international expert committees and recommendations for action were drawn up as a result. There are indications that these recommendations for action have also been implemented gradually. After the COVID-19 pandemic posed additional challenges for the polio programme in 2020 and 2021, the situation stabilised significantly in the following years when observing cases of wild poliovirus and vaccine-derived cases (see Impact).

Since the PEI does not carry out routine immunizations, it must be taken into account that – apart from the problematic districts – high vaccination coverage of approx. 85% is achieved nationwide as part of the routine immunizations by the EPI according to WHO specifications; this is also a positive result compared to Afghanistan (see Fig. 2).

Fig. 2: Polio vaccination rate in one-year-olds in % for Pakistan and Afghanistan



Source: The WHO Global Health Observatory – Polio (Pol3) immunisation coverage among one-year-olds (%)

9. Quality of implementation

The experience and expertise of the implementation partners WHO and UNICEF in the implementation of polio eradication programmes and the established structures of the PEI were fundamental to the effectiveness of the project. This includes the national *Emergency Operation Centre* (EOC) and its regional offices, which combine operational management, communication between partners and medical supervision. The Pakistani EOCs served as a model for Afghanistan to create similar structures. This also promoted the coordination and cooperation of the two polio programmes in Pakistan and Afghanistan. With its regional structures, the NEOC has ensured the management and implementation of the measures.

Overall, the Pakistani government showed a very high level of ownership of the polio programme, which is reflected not least in the creation of institutional structures of the PEI, such as the NEOC. Pakistan is also spending substantial funds to use military security forces to protect health personnel during vaccination campaigns. The expenditure of funds for the “last mile” of polio eradication, i.e. reaching the last polio reservoirs in a complex socio-cultural and a highly fragile environment with regard to security, is enormous – also for the Pakistani side.

Although the project was carried out in this fragile context, a dual objective is not used as a basis for the EPE. This is due to the vertical approach of the project, which was implemented by UNICEF and the WHO, which implemented the measures in a manner sensitive to the possibility of conflict, in which, for example, continuous dialogue with local opinion leaders and people with religious influence was sought to increase the acceptance of polio vaccinations. However, this did not make a direct contribution to stabilisation. The development of effective state structures in the public health sector to strengthen the health system is low; the aforementioned state contribution also primarily served to ensure the safety of vaccination personnel and not to mitigate conflicts.

In terms of implementation quality, it is positive to note that the AFP surveillance system in Pakistan has proven to be robust and reliable; environmental surveillance has as well, i.e. virus isolation from environmental samples is efficient and effective. This is an important early warning system for imminent outbreaks of both WPV1 and

vaccine-derived cVDPV2. Overall, the surveillance system is an important pillar of the PEI for achieving the eradication objective.

The backbone of the Pakistani polio programme is the female vaccination assistants, who usually have better access to households than male vaccination assistants (60% of vaccination staff are female); for them, on the one hand, the polio programme offers income opportunities, on the other hand, the vaccination assistants are exposed to significant security risks, especially in the Tier 1 and Tier 2 districts, which lead to the death of vaccination and security personnel each year. Pakistan is aware of the importance of female vaccination assistants and is implementing the new gender strategy with innovative approaches in some cases (see under 4, "The Listening Project"). Career prospects are also created through further education and training programmes, such as the future integration of polio vaccination personnel into the routine vaccination programme; the aim is also to fill an increasing number of PEI management positions with women.

10. Unintended effects (positive or negative)

The comprehensive and effective surveillance system of the polio programme had assumed important functions during the COVID-19 pandemic and continues to make an important contribution to epidemic and pandemic prevention in Pakistan, particularly in the area of environmental analyses. The municipal network of vaccination personnel has also contributed to the fight against the COVID-19 pandemic by supporting vaccination logistics.

Rating summary

The immunisation target of reducing the number of children under the age of five who are not reached by polio vaccination campaigns was significantly missed in some districts of the high-risk areas. The efforts of the Pakistani government and its partners in the 2018–2019 reporting period can nevertheless be regarded as a partial success, as the nationwide coverage with polio vaccinations and the quality of the vaccination campaigns recorded via the LQA system were effective. The surveillance and monitoring system of the polio programme has also proven to be effective. The careful analysis of the problems during the implementation period and the implementation of identified solutions have led to a stabilisation and significant reduction in the number of cases in recent years and demonstrate the PEI's potential for reform. In summary, the effectiveness is rated as moderately successful overall as the results are on the whole positive, albeit below expectations.

Effectiveness: 3 (both phases)

Efficiency

11. Production efficiency

The production efficiency (i.e. the minimum cost for achieving the results) is difficult to assess, as only data from other countries qualifies for comparison. Costs per vaccination cannot be determined due to the data situation; these would then also have to be assessed context-specifically due to the partially precarious security situation in Pakistan, as additional costs arise for transporting and protecting the vaccination teams.

However, it can be assumed that the cooperation with UNICEF and the WHO provided highly competent partners with many years of experience in the efficient use of funds in globally coordinated and internationally funded polio control programmes. UNICEF is responsible for the procurement and distribution of approximately 60% of the world's vaccine volume and can thus achieve favourable prices. The administrative fees were 7% for the WHO and 5% for UNICEF. This corresponded to comparable FC projects in Afghanistan and India and can be considered appropriate.

Potential for increasing production efficiency would have resulted from coordination and cooperation with the EPI routine vaccination programme; this is addressed at a global level with cooperation agreements for the implementation of joint implementation strategies. The financial implications of this enhanced cooperation cannot be assessed; however, the potential of a PEI and EPI cooperation was certainly not fully exploited during the implementation period of the FC funds and deficits in this regard were noted in the TAG and other monitoring reports.

There were no significant delays in the implementation of the FC funds, which were paid out in a single tranche to the WHO and UNICEF in both phases. This was due, among other things, to the fact that FC co-financing only amounted to around 4% of the total costs of the PEI in 2018 and 2019 and that the funds could be used flexibly within the framework of the work-sharing approach of the WHO and UNICEF.

12. Allocation efficiency

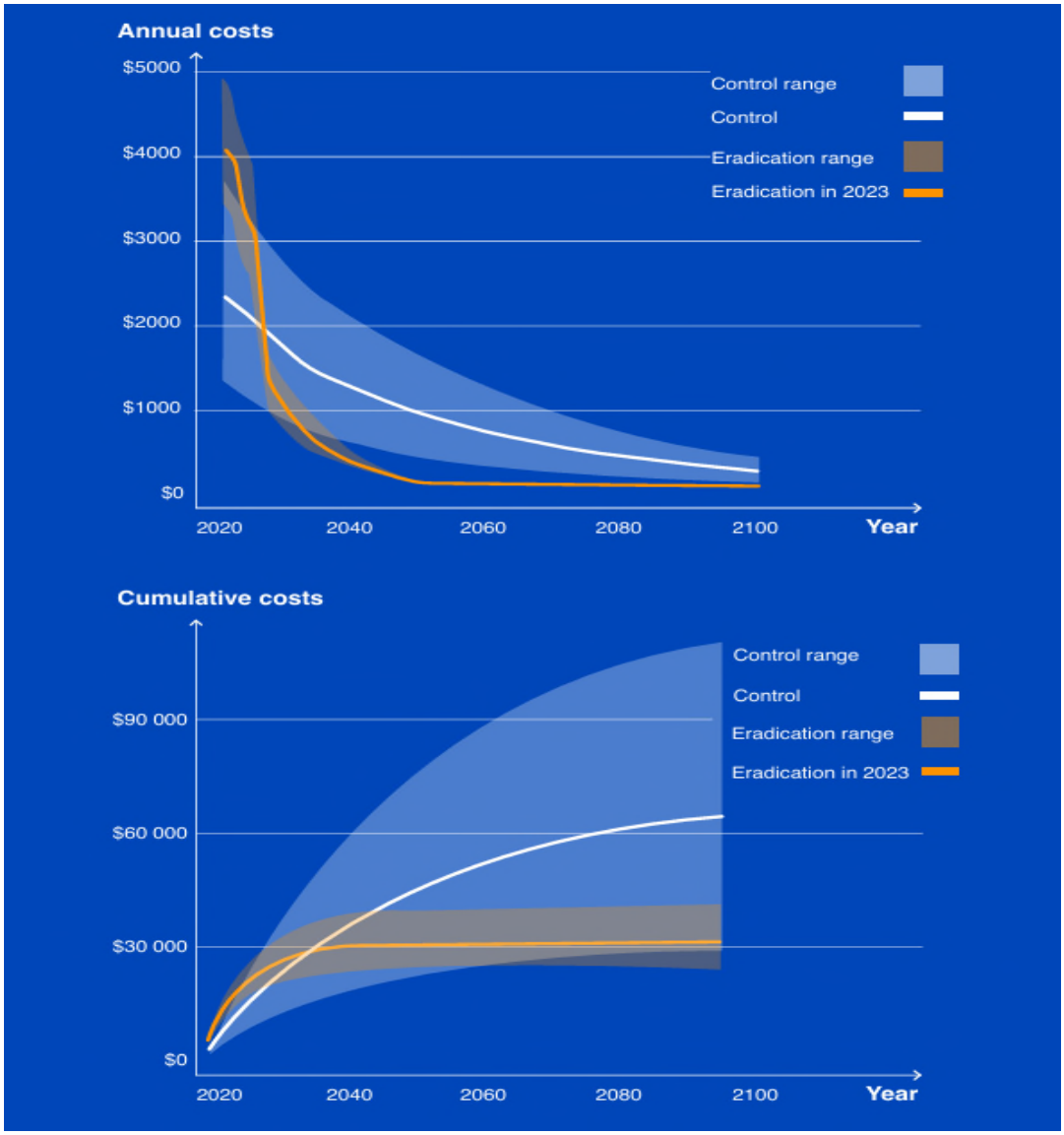
Current global cost benefit analyses of GPEI polio control measures showed a net benefit of USD 28 billion, assuming polio will be eradicated by 2023.[7] An earlier 2010 cost-benefit analysis calculated a net benefit of USD 47 billion under the assumption that the eradication target would be achieved by 2012. The downturn in expected net benefit is due to the delayed success of eradication and higher costs for modified and adapted vaccination strategies, such as the increased use of inactivated polio vaccines (IPV) and novel OPVs (nOPV), which are more genetically stable.

It should also be noted that the above analysis, which was prepared prior to the COVID-19 pandemic, did not include non-polio-specific benefits. These benefits beyond polio control became evident in the case of COVID-19 in the fight against and prevention of the pandemic. The current GPEI *Polio Eradication Strategy* takes a holistic approach that also includes non-polio-specific outcomes and impacts, including health system strengthening, integrated services and gender equity. This makes the overall benefit higher than when viewed from a polio perspective alone.

An alternative scenario for polio eradication would be to control and to keep polio infections permanently at a low level. Econometric analyses show that investments aimed at eradication by 2100 result in cumulative savings of more than USD 100 billion compared to a scenario of permanent polio control (continuous costs for vaccinations, surveillance, monitoring, treatment).

[7] Thompson KM, Kalkowska DA: An updated economic analysis of the Global Polio Eradication Initiative. *Risk Anal.* 2021;41(2):393-406. 10.1111/risa.13665

Figure 3: Annual total costs and cumulative costs for an eradication scenario vs a control scenario (USD million, 3% annual discount rate)



Source: GPEI Investment Case 2022–2026: investing in the promise of a polio-free world[8]

From a global perspective, given Pakistan's role in achieving the global eradication target, investment in the Pakistani polio programme is extremely important. From a national point of view and from the point of view of the direct target group, this allocation efficiency does not exist to the same extent. The burden of disease caused by polio infections is significantly lower than other infectious diseases in children under the age of five, even among the increased cases of disease during the implementation period. Basic health care, which is desolate to some extent, especially in high-risk areas, contrasts the personnel- and resource-intensive vaccinations of the polio programme, and this contradiction is also perceived accordingly by the population. Solutions, in particular integrated services, are therefore increasingly being implemented by the PEI.

Rating summary

[8] The modelling is based on the original modelling of "Zimmermann M, Hagedorfn B, Lyons H, Voorman A. Institute for Disease Modelling, 2019" with updated data.

Due to the cooperation with the established structures of the implementation partners, in particular UNICEF as a central procurement unit, production effectiveness can be assessed as good; however, there are indications

that potential for increasing efficiency, especially with the EPI, has not been sufficiently exploited. From an allocation perspective, the efficiency of the GPEI eradication strategy and the efficiency of vaccinations is generally high. In view of the lack of coordination and cooperation between the PEI and the EPI, which experts repeatedly warned about, the overall efficiency is rated as moderately successful.

Efficiency: 3 (both phases)

Impact

13. Overarching (intended) developmental changes

The objective at impact level, which was adjusted during the EPE, was to contribute to the nationwide – and thus worldwide – eradication of polio. This, in turn, would hopefully allow Pakistan – along with Nigeria and Afghanistan – to no longer be listed as a polio-endemic country and to be removed from the list of polio-endemic countries in 2019 after a three-year certification phase. This goal could not be achieved, as cases of WPV1 infection have continued to arise until the present day – and indeed have followed a rising trend in 2019 and 2020, primarily due to the inaccessibility of certain areas and a resulting uptick in missed children. Since transmission could not be effectively interrupted in the core regions, there was also transmission beyond the core or high-risk areas. Due to the COVID-19 pandemic, vaccination campaigns could sometimes only be carried out to a limited extent or not at all.

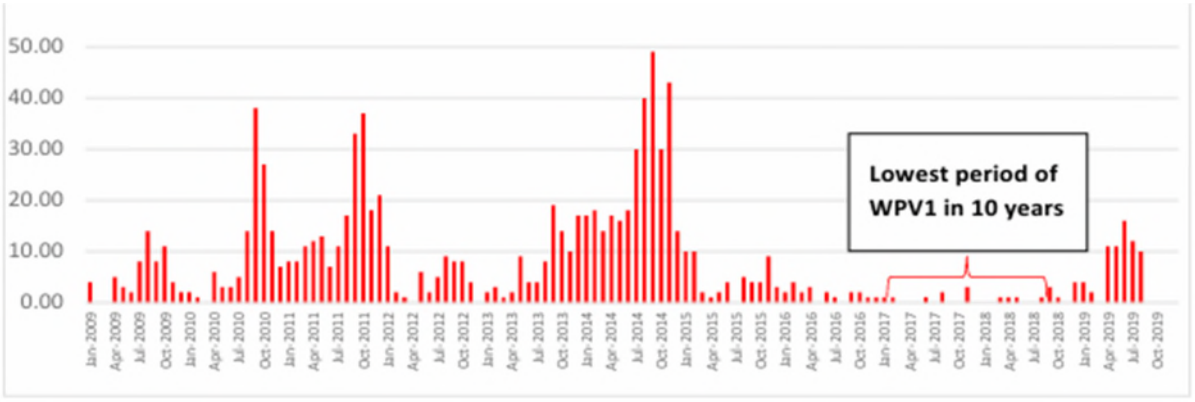
The GPEI has succeeded globally in delivering a 10,000-fold reduction in cases of WPV1 infection over the past three decades, and Nigeria, as one of the three remaining endemic countries, was certified as polio-free in 2020. However, cases of wild polio infection in Pakistan reached a new high in 2019 and 2020.

Target achievement at the impact level can be summarised as follows:

Indicator	PA status	Target value PA	Actual value at final inspection 2020	Actual value at EPE 2023
In Pakistan, no new infections caused by the wild poliovirus (WPV1) occur in 2016, making it possible to certify Pakistan as polio-free in 2019.	8 (until August 2016)	0 from the end of 2016	147 (2019) 84 (2020) 1 (2021)	6 Not achieved

At the time of project appraisal for the first phase (2016), the NEAP 2016–2017 was used as the basis. This planned to interrupt the chain of new infections by the end of 2016. The WHO and UNICEF also considered this ambitious goal feasible. In fact, there were historically low WPV1 cases in the 18-month period from January 2017 to mid-2018. The specified time horizon was defined correspondingly for the indicator.

Figure 4: WPV1 case figures 2009–2019



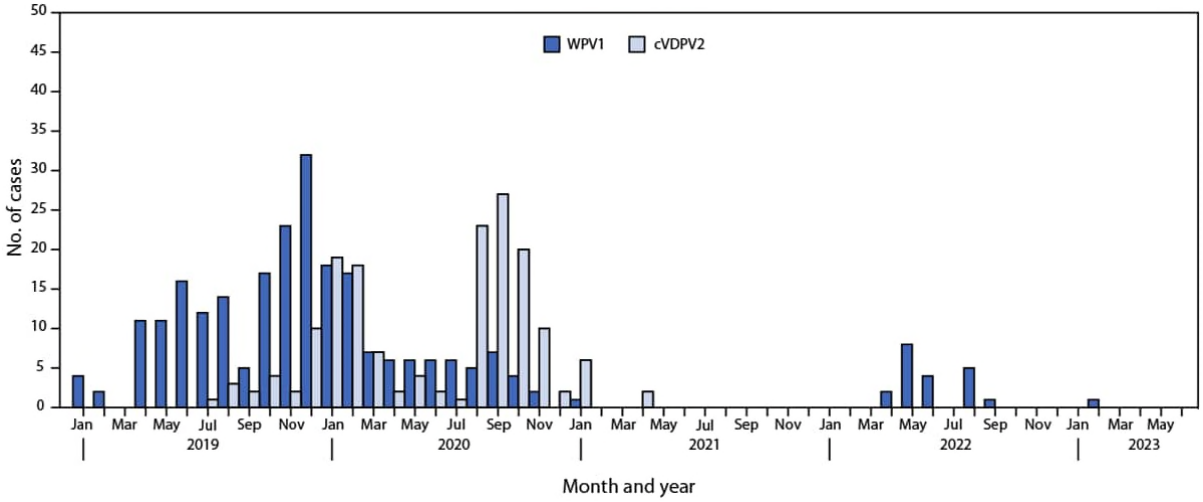
Source: TAG report, August 2019

In general, the timeline for achieving the target of interrupting the transmission of WPV1 was and still is considered too optimistic at both national and international level. All NEAPs in Pakistan and all GPEI strategies always had a time horizon of two to three years to achieve the eradication target, which was missed every time. It was also not possible to achieve the goal of interrupting WPV1 transmission by the end of 2023, as stated in the NEAP 2021–2023 and the current GPEI *Polio Eradication Strategy 2022–2026*.

14. Contribution to overarching (intended) developmental changes

During the implementation period of the two phases of the FC project, the vaccination situation in the high-risk areas deteriorated significantly from mid-2019, as described in the Effectiveness section. This is due not only to the complex situation in the border regions with Afghanistan, the somewhat opposing socio-cultural attitudes towards vaccination, a population that is very mobile to some extent, but also to the operational deficits of the polio activities. In some districts of the high-risk areas, the vaccination gaps led to a sharp increase not only in WPV1 cases, but also in cVDPV2 cases (see Fig. 5). It must be taken into account that the vaccine-derived cVDPV2 cases are an inevitable side effect of vaccination activities if vaccination coverage is not sufficient, especially in high-risk areas. Since 2021, this problem has been addressed by new oral vaccines that are more genetically stable.

Figure 5: WPV1 and circulating vaccine-derived poliovirus type 2, by month from Jan. 2019 to June 2023



Source: CDC Report: Progress Toward Poliomyelitis Eradication – Pakistan, January 2022 – June 2023

Following intensive analyses, the crisis of the Pakistani polio programme caused by various external and internal factors led to extensive recommendations for action; experiences from Pakistan also flowed into the 2021 revision of the current GPEI strategy "*Delivering on a Promise*".

The main activities at national level to improve the situation were aimed at increasing the acceptance and quality of vaccinations in high-risk districts. For this purpose, district-specific micro-plans and communication strategies with the proactive involvement of local opinion leaders have been or will be designed and implemented. Vaccination staff are increasingly being recruited locally to accommodate different ethnicities and language barriers to access. Additional training and motivational activities were carried out to reduce the sometimes-widespread practice of marking the child's fingers as a sign of vaccination, even though vaccination did not take place (fake finger marking, FFM).

In order to increase acceptance of polio vaccinations in high-risk districts, the provision of integrated basic health care services as well as measures for the supply of clean drinking water, improvement of sanitation conditions and hygiene (WASH) should also serve to increase acceptance. In addition, coordination and cooperation with the routine vaccination programme (EPI) was intensified in order to reach children who have not yet received a vaccination (known as "zero-dose children").

It can be assumed that these and other measures contributed to the significant stabilisation of the polio situation, as shown in Figures 7 and 8. Since the beginning of 2021, there has been a massive reduction in transmission cases, which are concentrated in a small geographical region. It is also important to note that WPV1 cases that have occurred since 2022 only originate from one monophyletic group (i.e. have a common origin of infection), while there were 11 monophyletic groups in 2020.

It is not possible to determine or quantify exactly what contribution FC co-financing has made to the developments in the polio situation.

Figure 6: WPV1 and cVDPV2 polio cases from 2015 to 2024 (2022), differentiated by province

WPV1 cases

Province	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Punjab	2	0	1	0	12	14	0	0	0	0
Sindh	12	8	2	1	30	22	0	0	2	1
Khyber Pakhtunkhwa	33	10	1	8	93	22	0	20	4	0
Balochistan	7	2	3	3	12	26	1	0	0	4
Gilgit-Baltistan	0	0	1	0	0	0	0	0	0	0
Azad Jammu & Kashmir	0	0	0	0	0	0	0	0	0	0
ICT	0	0	0	0	0	0	0	0	0	0
Total	**54**	**20**	**8**	**12**	**147**	**84**	**1**	**20**	**6**	**5**

Vaccine-derived cVDPV2 cases

Province	2015	2016	2017	2018	2019	2020	2021	2022
Punjab	0	0	1	25	1	0	0	0
Sindh	0	0	0	45	2	0	0	0
Khyber Pakhtunkhwa	2	0	16	42	1	0	2	0
Balochistan	0	1	0	23	4	0	0	1
Gilgit-Baltistan	0	0	4	0	0	0	0	0
Azad Jammu & Kashmir	0	0	0	0	0	0	0	0
ICT	0	0	1	0	0	0	0	0
Total	**2**	**1**	**22**	**135**	**8**	**0**	**2**	**1**

Source: Polio Cases Update 2020 | Across Pakistan's Provinces (endpolio.com.pk), accessed 12 June 2024

15. Contribution to overarching (unintended) developmental changes

The vaccination campaigns may have caused or increased social tensions due to vaccination scepticism and high security risks. To the greatest extent possible, the programme was designed to be sensitive to the possibility of conflicts and was continuously developed in this respect through locally adapted measures and the use of personnel, in particular women, from the target group with corresponding cultural understanding and language skills.

In addition to diseases caused by WPV, infections with circulating vaccine-derived poliovirus type 2 (cVDPV2) have been a major problem in recent years and can be considered as an unintended (side) effect of oral vaccination. This is being counteracted with new, more stable vaccines (see above).

Rating summary

The overarching developmental objective of accomplishing nationwide – and thus contributing to the global – eradication of polio has not yet been achieved. It is not yet foreseeable when the eradication target will be reached. Following a massive deterioration in the polio situation in 2019–2020, the situation has stabilised and seen significant improvement. The FC project's contribution is plausible, but not quantifiable and largely dependent on the implementation partners and their mandate by the GPEI as well as the overall coordination by the Pakistani NEOC. The developmental impact is rated as only moderately successful given that eradication has not yet been achieved.

Impact: 3 (both phases)

Sustainability

16. Capacities of persons concerned

As long as wild poliovirus is still circulating in Pakistan and vaccine-associated infections occur, reactive vaccination campaigns and the consistent continuation of basic polio vaccination through routine vaccinations are essential for sustainability and target achievement. Cross-border cooperation with Afghanistan is also crucial in order to limit migration-related cross-border infections. In addition, continuous efforts must be made to significantly reduce the number of "missed children" for whom vaccinations have not previously been possible. Approximately two million children under the age of five live in the high-risk area in southern KP and eastern Afghanistan, which is considered an endemic block. Approximately 300,000 of these children are not regularly vaccinated.

Improving general living conditions and basic health care is also crucial for sustainability. Especially in the Tier 1 and 2 districts, access to safe drinking water is limited and there is a high prevalence of malnutrition and undernutrition. This plays a decisive role in contributing to the survival of the poliovirus and its ability to spread to vulnerable children with low immunity levels.

Pakistan will not have the necessary institutional, financial and human resources to sustain the listed polio eradication activities without external support until the country can be certified polio-free after a three-year period without new WPV infections. For this reason, the international donor community must continue to support Pakistan in order to achieve the GPEI's goal of a polio-free world. It is not currently possible to estimate the extent to which previous state and private bilateral donors will remain willing and able to pay in the coming years. However, it can be assumed that GPEI will continue to strongly support Pakistan as one of the two remaining endemic countries and compensate for any funding gaps that may arise.

17. Contribution to support for sustainable capacities

The FC funds of the two phases contributed to closing the financial gap for the implementation of the NEAP 2018–2019. Vaccination campaigns using FC-financed vaccines were used to close vaccination gaps to interrupt the infection chain and are therefore sustainable per se. It is not possible to quantify the extent to which sustainable structures were built up and strengthened using FC financing. In particular, however, the surveillance and monitoring system – also supported by FC funds – proved effective during the COVID-19 pandemic and continues to play an important role for the health system in terms of pandemic prevention.

18. Durability of effects over time

A sustainable stabilisation of the polio programme in Pakistan is essentially dependent on the following factors:

- The programme receives political support at the highest level up to provincial and district administrations and is not instrumentalised for the individual interest of political parties;
- The security situation in the high-risk districts allows access to the target group and thus a gradual reduction of the vaccination gaps there;
- Pakistan and Afghanistan manage to coordinate their respective polio programmes and eradicate poliovirus on both sides of the border with effective strategies, taking into account the specific circumstances of the remaining core reservoir.

Given the importance of Pakistan as one of the two remaining endemic countries of WPV1 and its importance for achieving the global goal of polio eradication, it can be assumed that Pakistan will continue to receive support from multilateral and bilateral development partners and that the GPEI will fill any acute financial gaps.

It can also be assumed that the appreciation and promotion of female vaccination personnel will be maintained or expanded. The GPEI gender strategy is adopted by the Pakistani PEI and implemented with innovative approaches (e.g. The Listening Project). In addition, the PEI is continuously expanded and adapted with locally adapted measures, for example to address nomadic population groups.

Rating summary

Eradication of poliovirus is inherently sustainable. At the present time, it is not possible to predict when this will be achieved. Following the deterioration of the situation in 2018 and 2019, the polio programme has been able to achieve stabilisation with a massive reduction in polio cases. The most important factor with regard to sustainability, i.e. for achieving the eradication target, is the security situation in the high-risk areas. This must still be assessed as highly fragile. The polio programme will not be financed from Pakistan's own resources in the foreseeable future, but it is expected that sufficient external financial support will be provided. Overall, the project's sustainability is rated as moderately successful.

Sustainability: 3 (both phases)

Overall rating: 3

Taking into account the high relevance and positive development at outcome and impact level despite the failure to achieve the objectives, as well as the plausible project contribution in a coherent manner, but also taking into account the deficits in the efficiency of the FC contribution, the FC project is rated as moderately successful overall.

Contributions to Agenda 2030

The national polio vaccination programme is being/was implemented in close cooperation with the global partners UNICEF and WHO along with the support of other donors under the umbrella of the GPEI. Free basic immunisation for everyone – especially children under the age of five – takes into account the human right to health and increases the chances of healthy development and participation for everyone. The Pakistani polio programme directly contributes to SDG 3, and good health is a basic prerequisite for being able to exploit further socio-economic development potential. The fact that vaccines prevent diseases means that a burden is lifted both on the level of individual families (especially for women) and on a macroeconomic level, taking into account the avoided consequential costs of disease.

Project specific strengths/weaknesses and general conclusions/lessons learned

The project had the following **strengths** in particular:

- The well-structured coordination of the PEI in cooperation with the Ministry of National Health Services Regulations and Coordination, the National Emergency Operating Centre responsible for the polio

programme, and the WHO and UNICEF as implementation partners. The GPEI provides a well-established global framework that can provide the necessary technical support to the national programme and, where appropriate, close financial gaps.

- The vertical implementation structure enables efficient and effective implementation. Another strength is certainly an extensive and tried-and-tested monitoring and surveillance system, which can also be used to prevent and combat pandemics.

The project had the following **weaknesses** in particular:

- The frequent politicisation of the programme, which primarily served the particular interests of political parties.
- The low capacity of the Pakistani health care system, which has particular deficits in the high-risk areas. In combination with poor hygiene and the food situation, this leads to a low immune status and low resilience to infectious diseases, especially in these areas.
- The strong donor dependence is potentially a risk, but there is ongoing international support so far and it can be assumed that this will continue.

Conclusions and lessons learned:

- In the institutional configuration of the implementation of the Pakistani polio eradication programme via the WHO and UNICEF, there are limited or no conceptual design options for FC co-financing and project management.
- The developmental additionality of a small FC contribution (approx. 4% of the total costs) for a relatively short implementation period (two projects each with one-year implementation) is limited, while at the same time there are considerable the transaction costs for all parties involved in the case of co-financing a national polio programme via the implementation partners WHO and UNICEF. Direct financing of the Global Polio Eradication Initiative GPEI at international level appears to be the more efficient way in this constellation and confirms the German Federal Ministry for Economic Cooperation and Development's (BMZ) decision regarding the future financing modality of the GPEI.
- Successful polio eradication in Pakistan requires the cooperation of two vertical programmes: (a) the specific *Polio Eradication Initiative* (PEI) and (b) the *Expanded Programme on Immunisation* (EPI) for routine immunisation. These two programmes, PEI and EPI, are technically and financially supported in Pakistan by two global initiatives, GPEI and Gavi, and both are implemented through UNICEF and the WHO. Only the cooperation between GPEI and Gavi, formalised at international level, seems to be effective with regard to PEI/EPI cooperation at national level. This underlines the statement that direct financing of the GPEI is also the more effective path in terms of design options.
- There is no alternative to the vertical implementation structure of the polio programme via the WHO and UNICEF in view of the serious deficits in the Pakistani healthcare system for effective and efficient target achievement of polio eradication. However, it is not only the COVID-19 pandemic that has shown that a vertically designed programme can also make important contributions to strengthening the healthcare system. In the case of pandemic prevention or control, these contributions are in the area of surveillance and vaccine logistics. Although the integrated approach to health system strengthening is set up on a global scale in the current GPEI strategy and is also supported through GPEI funds, it requires flexibility, a willingness to innovate and good transformation management at national level.

Evaluation approach and methods

Ex post evaluation methodology

Ex post evaluations follow the approach of a rapid appraisal, i.e. a data-supported, qualitative contribution analysis resulting in an expert opinion. Effects are attributed to the project considering plausibilities, based on thorough analysis of documents, facts and impressions. This includes – if possible – the use of advanced technology (e.g. satellite imagery, online interviews, geocoding). There is a follow-up on possible conflicting information, attempting to eliminate inconsistencies and to base the rating on information that – to the extent possible – has been confirmed through different sources (triangulation).

In order to examine the impacts of the project, the following comparison scenarios were considered: before/after; target/actual. The following methods are used for the evaluation: Internet research, literature research, expert interviews, questionnaires and analysis of health-relevant data and digital information.

Documents:
Internal project documents, Pakistani government strategies and reports, UNICEF and WHO reports and information, secondary specialist literature and scientific analyses.

Data sources and tools for analysis:
Health data from the WHO and UNICEF, GPEI; surveys by other donors (e.g. CDC).

Interview partners:
Project-executing agency, WHO, UNICEF, (local) KfW specialist staff

The analysis of project effects is based on the theory of change defined at project appraisal and documented within the impact matrix, which may be updated for the purposes of the evaluation. The evaluation report argues which factors contributed to the observed effects and why – as well as the probable extent of the project's contribution (contribution analysis). The context of the project is taken into account concerning its influence on the results. The conclusions are put into perspective regarding the availability and accuracy of the available data. An evaluation concept is the frame of reference for the evaluation.

On average, the methods offer a balanced cost-benefit ratio for project evaluations that maintains a balance between the knowledge gained and the evaluation costs, and allows for systematic evaluation of the effectiveness of the FC projects across all project evaluations. The individual ex post evaluation therefore does not meet the requirements of a scientific assessment in line with a clear causal analysis.

The following aspects caused limitations for the evaluation:

- Lack of communication during the implementation of the two phases between KfW and the executing agency as well as the implementation partners at national level. There was therefore no link to the EPE.
- The data situation is inconsistent, incomplete and not stringent in some cases.
- Disaggregated data by gender or income were not available.

Rating methodology

Projects are rated on a six-point scale for each of the OECD DAC criteria. The scale is as follows:

Level 1 very successful: result that clearly exceeds expectations

Level 2 successful: fully in line with expectations and without any significant shortcomings

Level 3 moderately successful: project falls short of expectations but the positive results dominate

Level 4 moderately unsuccessful: significantly below expectations, with negative results dominating despite discernible positive results

Level 5 unsuccessful: despite some positive partial results, the negative results clearly dominate

Level 6 highly unsuccessful: the project has no impact or the situation has actually deteriorated

The overall rating on the six-point-scale is compiled by weighting all six individual criteria as appropriate to the project in question. Rating levels 1–3 of the overall rating denote a "successful" project while rating levels 4–6 denote an "unsuccessful" project. It should be noted that a project can generally be considered developmentally "successful" only if the achievement of the project objective ("effectiveness"), the impact on the overall objective ("impact") and the sustainability are rated at least "moderately successful" (level 3).

The annex to this report is available upon request.

List of abbreviations:

FI	Final Inspection
BMZ	Federal Ministry for Economic Cooperation and Development
cVDPV2	Circulating Vaccine-Derived Poliovirus Type 2
CPI	Corruption Perception Index
DAC	Development Assistance Committee
EPI	Expanded Programme on Immunization
ES	Environmental Surveillance
EUR	Euro
FFM	Fake finger marking
FC	Financial cooperation
FC E	FC evaluation
Gavi	Global Vaccine Alliance
GPEI	Global Polio Eradication Initiative
HDI	Human Development Index
KP	Khyber Pakhtunkhwa
MoNHSR&C	Ministry of National Health Services, Regulations and Coordination
MP	Module proposal
NEAP	National Emergency Action Plan
NID	National Immunization Days
NPAFP	Non-Polio Acute Flaccid Paralysis
OPV	Oral Polio Vaccine
PA	Project appraisal
PAR	Project appraisal report
SIA	Supplementary Immunization Activity
SDG	Sustainable Development Goal
SNID	Sub-national Immunization Days
TAG	Technical Advisory Group
UNICEF	United Nations International Children's Emergency Fund
USD	US Dollar
WHO	World Health Organization

About this publication

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